Queensland

Water Regional Alliance Program

QWRAP UPDATE: YEAR 2
2016-17 FUNDING

qldwater

LGAQ

BACKGROUND

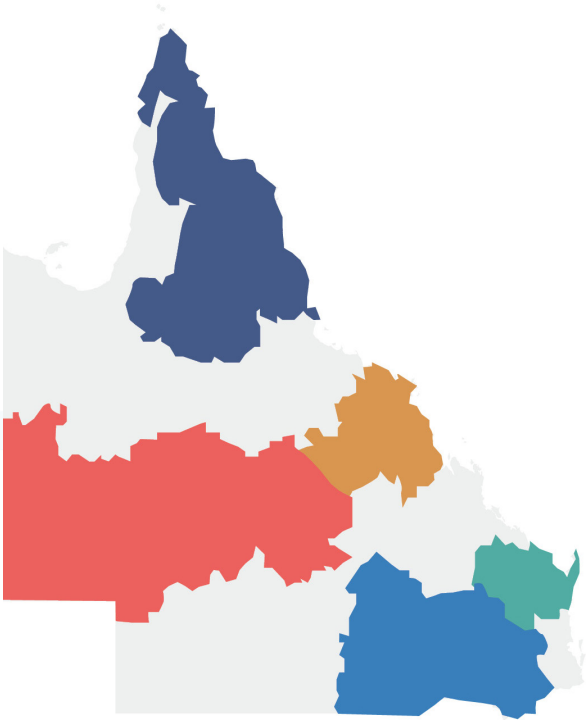
The Queensland Water Regional Alliances Program (QWRAP) was developed in 2011 as an industry-led response to the calls in three national reports for reform of water and sewerage services (WSS) in regional Queensland.

The program was primarily designed to investigate alternative institutional and governance models while fostering voluntary collaborative opportunities. Most regions involved in the QWRAP program have opted to form regional alliances and continue to investigate further options for their WSS.

The program receives seed funding from the Queensland Government through the Department of Energy and Water Supply along with investment from the Local Government Association of Queensland, Queensland Water Directorate (***qldwater***) and participating councils.

QWRAP GROUPS

- Outback Regional Water Alliance
- Far North Queensland Water Alliance
- Whitsunday-Isaac-Mackay Water Alliance
- Wide Bay Burnett Urban Water Technical Committee
- Downs and Surat Basin Water Group



QWRAP OUTCOMES

QWRAP has progressed significantly during the 2016/17 period. The program **saved in the order of $3,000,000** for Queensland's communities in the last financial year alone.

Further intangible benefits are also emerging, including building a positive profile within communities, and deferring or avoiding capital costs. Participating councils report that the **opportunity for shared learnings** have been one of the most significant benefits.

The Queensland Government's financial investment has been leveraged well; with $100,000 of the DEWS **grant matched more than dollar for dollar** through "bid pool" initiatives.

A further $135,000 has been invested in **employing five regional coordinators.** The most significant investment has been the in-kind contributions by councils, as well as the LGAQ and qldwater.

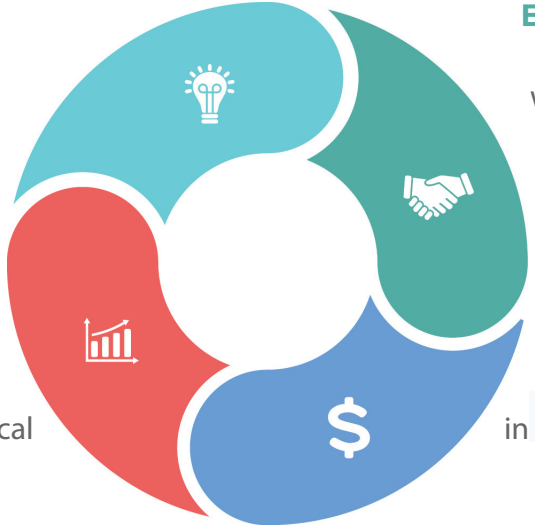
At a broader level, annual research projects and forums have focused on key issues identified by the industry and DEWS. Research was initiated this year into the **condition of regional water infrastructure**, the potential cost of replacement and required rate of replacement.

In addition, the issue of institutional change remains front-of-mind for each of the regions. This has been particularly valuable in **responding to continuing criticism** of the Queensland urban water industry, most recently by the National Productivity Commission.

QWRAP continues to drive industry **efficiencies and innovation through collaboration** that is tried and tested and comes at relatively low cost.

45 PROJECTS
completed or initiated.

EIGHT PEOPLE EMPLOYED
with additional regional work generated.



CLOSE TO $3,000,000 SAVINGS
to state and local governments.

> $235,000 INVESTED
in councils' water and sewerage services.

Longreach elevated water reservoir

Outback Regional Water Alliance: Spring cleaning

The Outback Regional Water Alliance (ORWA) was the first of the QWRAP groups, with councils confirming their participation in the program in 2011.

The Remote Area Planning and Development (RAPAD) group accepted the recommendations made in the QWRAP business model investigation, and agreed to form the ORWA in 2013, with the exception of Winton and Blackall-Tambo councils.

In 2016, both Winton and Blackall-Tambo elected to join the ORWA. The inclusion of the remaining RAPAD participants means the ORWA region covers an area roughly half the size of New South Wales.

Area: 396,650 km^2 (23% of queensland)

Population: 10,546 (2.9%)

Councils: Barcoo, Barcaldine, Blackall-Tambo, Boulia, Diamantina, Longreach and Winton

WTPs: 9
Connections: 5,742
Length of mains: 348km

STPs: 10
Connections: 4,227
Length of mains: 158km

WTPs: Water Treatment Plants
STPs: Sewage Treatment Plants

Recognised Water Quality Program

ORWA's program examining drinking water quality across the region was short-listed for Australian Water Association and Institue of Public Works Engineers Australia – Queensland awards in 2017.

The program included a reservoir cleaning project for 13 water reservoirs, which removed sediments and debris from the internal walls and floors. The inspections undertaken during the project have been particularly valuable for identifying maintenance issues in some of the reservoirs that are now being addressed. The collaborative approach to the project realised cost savings of approximately $60,000.

The Alliance then undertook a water mains cleaning project that scoured over 200 km of water mains in 16 towns, providing both financial savings and better water services for the region. During the process water loss was minimised by using air scouring, rather than traditional mains flushing.

This method achieved a higher standard of cleaning with less wasted water, especially important for the drought declared councils in this region.

Not only was there a positive response from communities, but the joint procurement achieved savings of close to $75,000.

The program has also taken a regional approach to legislatively required drinking water quality audits by aligning reporting and audit dates with the Queensland Drinking Water Regulator for all councils. The aligned dates enabled the councils to engage a single auditor to perform all the audits, thereby saving on establishment costs for the work. The consistent approach provides information to underpin future development of the regional water quality program. The collaborative effort will achieve cost savings of approximately $15,000 in auditing costs for the region.

This water quality program is being formalised into on-going scheduled maintenance, which will include joint risk assessments, a review of disinfection processes, and the trial of a system for displaying water quality statistics online.

Sediment and debris depths ranged from 10mm to 600mm in the region's reservoirs.

Before

After

Some networks had considerable build-up of silt and debris and its removal significantly improved water quality.

Far North Queensland Regional Organisation of Councils : How to win friends and influence people

The QWRAP program in the far north commenced in 2012 with the participation of six councils, and has been the largest group in terms of the number of councils. In the following years deamalgamations and additional council participation has swelled the membership to 13 councils. The FNQ region is roughly 1.5 times the size of Victoria.

In 2016-17 the group completetd four projects, saving more than $34,500 through activities such as biosolids disposal, regional auditing, and engaging with State Goverment agencies. Projects currently underway include a regional assessment of skills and evaluating messaging regarding water restrictions.

Coordinating work across the diverse group has been challenging. Noting the differences in some of the issues between the coastal and in-land councils, the Far North Queensland Regional Organisation of Councils is dividing the region into an eastern and western group to better respond to the needs of the councils. The smaller group size is expected to enable a more targeted prioritization and response to water and wastewater issues.

Area: 317,334 km^2
(15% of queensland)

Population: 265,646 (16.6%)
Councils: Cairns, Douglas, Mareeba, Tablelands, Cassowary Coast, Cook, Croydon, Etheridge

WTPs: 43
Connections: 106,255
Length of mains: 3,993km

STPs: 15
Connections: 91,012
Length of mains: 1,904km

Facilitating better engagement with the State Government

Although financially supported by DEWS, the scope of QWRAP work often extends into other state government portfolios and responsibilities. When councils in the Far North were faced with a revised approach to environmental compliance by the Department of Environment and Heritage Protection (DEHP), the QWRAP framework provided the forum for engagement between DEHP and councils. In a series of workshops, councils not only came to a better understanding of the new compliance regime, but were able to work with DEHP to ensure more streamlined and fit-for-purpose compliance requirements.

Engaging with agencies outside of DEWS allows councils and State Government to better consider regional issues across the range of water and wastewater responsibilities. With over eight State Government agencies responsible for some aspect of the water cycle, communications can be strained across the number of stakeholders. The work of the Far North group has lead the way in demonstrating the value of QWRAP in facilitating better engagement by giving State Government agencies a single point of contact with a region.

Newly constructed Mareeba sewage treatment plant

Whitsunday, Issac and Mackay Water Alliance : Wisdom of the crowd

The Whitsundays, Issac and Mackay (WIM) region began investigations into QWRAP in 2013 and formed an alliance in 2014. The WIM region is roughly 1.5 times the size of Tasmania.

Although the WIM alliance has the smallest number of council members - and is the second smallest in regional size - the region is a leader in council collaboration and strategic planning. Over the past year the alliance conducted a regional risk assessment of their water and wastewater operations, and explored the potential for the nutrient offset program proposed by DEHP.

While there have been no tangible cost savings from the projects, the regional alignment of operations and strategy is enabling greater interoperability of the systems and policies that support the services. The greater consistency is likely to draw out savings in future work.

Area: 90,362 km^2
(5% of Queensland)

Population: 169,687 (9.7%)
Councils: Whitsunday, Isaac and Mackay

WTPs: 22
Connections: 66,354
Length of mains: 1,961km

STPs: 11
Connections: 58,337
Length of mains: 1,453km

Facilitating peer support and networking

QWRAP has helped provide a support network for system issues. The WIM alliance has also held two operator forums, pulling together regional treatment plant operators to discuss issues such as safety and monitoring systems. Not only do the forums further support the regional network, they give operators important connections and perspective to their work.

The impact of the network and forums was most notable following Cyclone Debbie earlier in 2017. During the cyclone staff from Mackay and Whitsunday Regional Councils could use relationships built as part of QWRAP to support each other in managing the damage to water and wastewater infrastructure. The familiarity with neighboring systems meant that advice provided was more relevant and timely to those seeking it.

An unexpected benefit of this network was demonstrated when each of the councils experienced staff turnover resulting in the loss of the service managers in 2016. Typically such turnover would result in a loss of knowledge and drawn out periods of inactivity while new managers familiarise themselves with the role. QWRAP was a vital resource and a reservoir of knowledge the managers could access.

Wide Bay Burnett Regional Urban Water Technical Committee : A new lease on life

The Wide Bay Burnett Regional Urban Water Technical Committee, consisting of five councils, began investigations in to the QWRAP program in 2013. The councils officially formed a regional alliance in 2015. The committee is the smallest geographical area – about 0.75 times the size of Tasmania - but has the largest population of all QWRAP groups across 50 communities.

The region is however characterised by a number of small councils with communities separated by large distances, creating challenges in achieving economies of scale and broader institutional reform.

The committee completed four projects over 2016-17, achieving the largest costs savings of any QWRAP project to date through the regional sewer main relining program. Projects underway include a regional design and construct code for water and sewerage infrastructure, along with a regional water strategic plan to ensure future water security.

Area: 48,567 km^2
(3% of Queensland)

Population: 286,624 (18.7%)
Councils: North Burnett, Bundaberg, Gympie, South Burnett, Fraser Coast

WTPs: 22
Connections: 66,354
Length of mains: 1,961km

STPs: 11
Connections: 58,337
Length of mains: 1,453km

Successful infrastructure collaboration

In 2016 the committee undertook a joint infrastructure rehabilitation program. Relining is a common process used to extend the life of sewer mains and is carried out on a routine basis by individual councils, but never before by a regional group. Relining contracts are procured from private providers but some networks are too remote or lack the critical mass to attract a broad range of contractors.

The committee developed a relining program and joint procurement process that met individual community and council needs while increasing critical mass and taking advantage of economies of scale.

The program standardised contractual arrangements for sewer relining to provide council participants with greater certainty and degrees of freedom in dealing with contractors. By establishing an ongoing market and clarifying contractual principles it was hoped that the market would be provided with better information on a more timely basis and thus be more prepared to partner with the committee.

The program cost just over $6 million with 10% savings delivered to councils and an additional $2.4 million saved due to a council using relining technology instead of a planned full-replacement program.

Downs and Surat Basin Regional Water Group: A stitch in time saves nine

The Downs and Surat Basin (DASB) region commenced discussions with the QWRAP program in late 2015, with six councils confirming their participation in the program in mid-2016. The region is the youngest of all the QWRAP groups. The region, about two-thirds the size of Victoria, has the highest number of water services and sewerage services out of all the QWRAP groups, with the region servicing 75 communities.

Goondiwindi water reservoir

Area:	167,358 km^2 (10% of queensland)
Population:	257,006 (16.9%)
Councils:	Balonne, Goondinidi, Maranoa, Southern Downs, Toowoomba and Western Downs
	WTPs: 51 Connections: 94,186 Length of mains: 3,093km
	STPs: 35 Connections: 72,864 Length of mains: 1,978km

Quick wins for the newest QWRAP Region

Although they have been in place for just over a year, the DASB region has been kicking some early goals. The councils in the region with a long history of demand management provided the foundation and underpinned the background material for the development of the QWRAP demand management resources.

The region also negotiated overlapping audit dates for their Drinking Water Quality Management Plans and undertook the audit process as a region. This project not only provided savings for each of the participating councils but also allowed for alignment of some future works and planning.

Milmerran water reservoir

The region has appointed a regional coordinator to provide support and manage projects. Through the coordinator's guidance, the group has also identified a number of potential projects for further action including opportunities for collaborative sewer relining, development of a regional monitoring framework and standards, a common asset management methodology and joint review of unit rates (i.e. costs).

Terms of reference for an external review of alternative regional models for the DASB area has also been scoped. Each council in the region is currently considering the benefits of further participation in the program and in individual projects.

Learnings from QWRAP regions builds online resource centre available for all Queensland councils

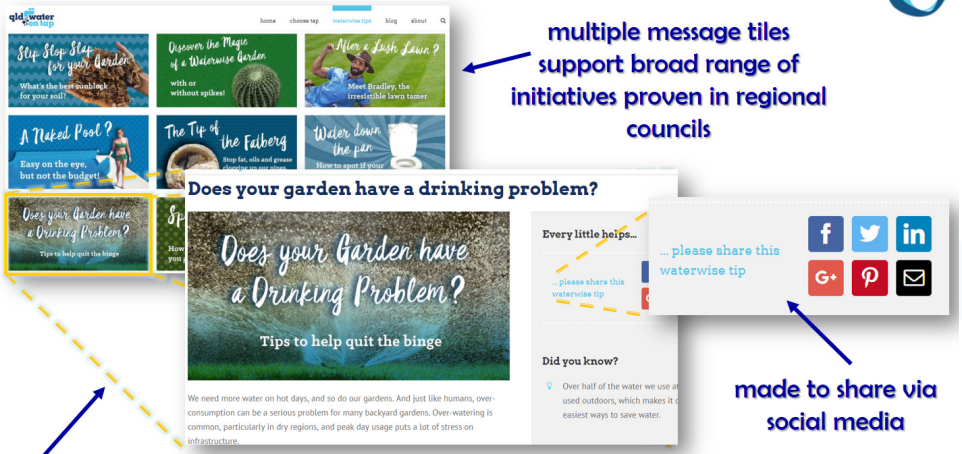
The *qldwaterontap* website has been rejuvenated to provide resources to support councils in public communications, initially around the topic of water efficiency.

The work does not duplicate existing resources – instead it focuses on providing a "one stop shop" for councils and provides better mechanisms to support social media campaigns.

Topics and messaging were developed from QWRAP research into barriers and enablers of communicating water security messages in regional Queensland.

The resources are available for all Queensland councils and can be developed further for locally-specific messaging.

qldwaterontap: Demand management resources for councils



multiple message tiles support broad range of initiatives proven in regional councils

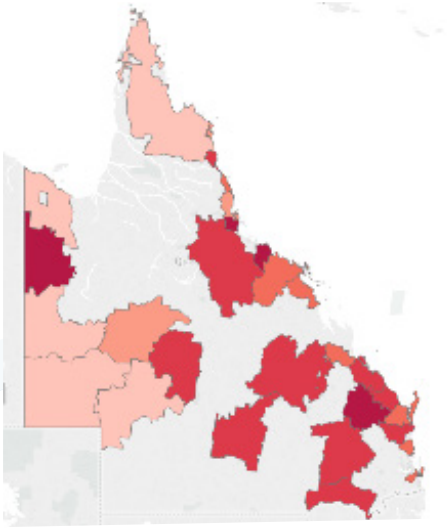
made to share via social media

each message tile linked to specific information with further links and a 'call to action'

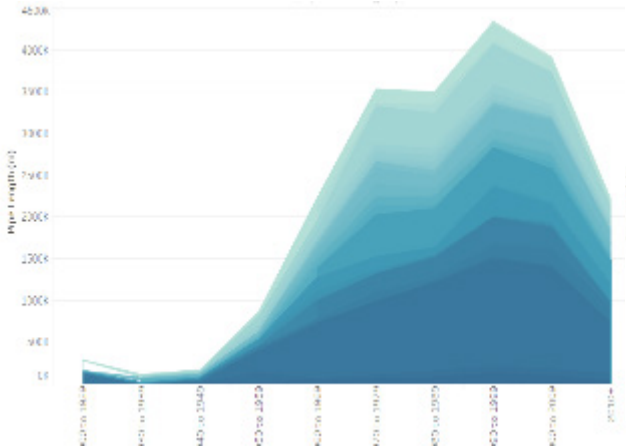
Are regional councils heading for an infrastructure cliff?

Latest QWRAP research focuses on the potential for an infrastructure cliff caused by the contemporary ageing of water and sewerage assets. As much of our water infrastructure was installed rapidly in the decades following World War II, much of it is reaching the end of its useful life. This first generation of water and wastewater infrastructure is rapidly giving way to the second generation that will need to be built.

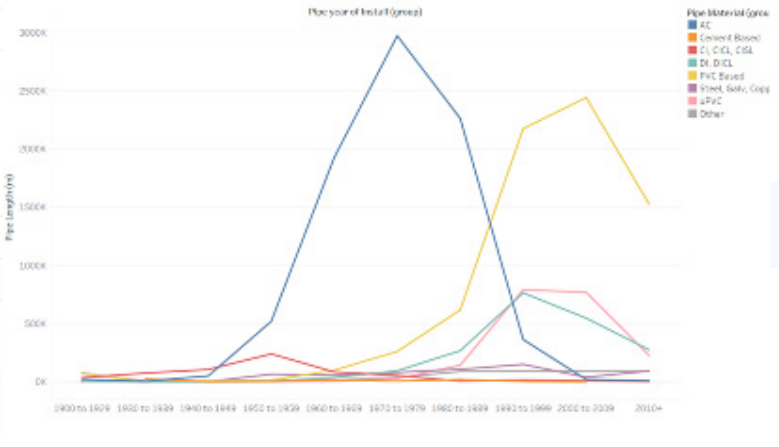
Of particular note are the underground assets that often remain out of sight and out of mind. The majority of early water pipes installed during the rapid expansion in the 50s to the 70s were made of asbestos cement and have an expected life of around 70 years. Many of these assets will degrade in the next two decades and will need to be repaired or replaced. This could provide additional costs for the sector and a period of investment that is unlike any other in Queensland's history.



Relative number of water pipes installed prior to 1979



Type and installation year for Queensland water pipes



Installation of water pipes installed by 27 service providers

Common QWRAP Activities

STATE-WIDE COMMUNICATION

QWRAP regions regularly meet to enable allow knowledge-sharing and information exchange. Regular chairs and coordinators forums commenced in 2016 and have been recently augmented with teleconference 'debriefs'.

These forums provide a platform for the regional coordinators and Chairs to discuss challenges in their regions, share ideas and hear about state initiatives and priorities. The meetings are also a good way to capture the value and benefits of QWRAP projects at a state level and allow innovations to be shared.

QWRAP RESEARCH

The objective of the research is to inform council deliberation about regional approaches to managing their services, as well as to inform the State Government and other key stakeholders about mechanisms to help drive this continuous improvement. QWRAP has researched areas such as modelling water demand, cost drivers and KPIs and a review of sustainable governance models.

Further research is occurring on current issues being faced by the regions. The current major research being undertaken is an investigation into the impact of aging buried water infrastructure on asset management and financial sustainability.

First Chairs and Coordinators forum meeting, October 2016

Whitsunday Regional Council Water & Waste Water Operations Centre, March 2017

"Being part of QWRAP helped before and after TC Debbie hit. Before the cyclone it was handy having known contacts within the group to discuss preparation tactics with. After the cyclone the benefit was in the lines of support to help recover, and also the opportunity to pass on the learnings from the event to enable us to continually improve and be in a better position for the next one."

– Troy Pettiford, Chief Operating Officer at Whitsunday Regional Council

Future directions for QWRAP

QWRAP has demonstrated benefits of cooperation in all trial regions. Through the program, more than 30 councils have built trust and close working relationships as part of five regional groups. The program has also demonstrated that efficiencies are possible, even where communities are too small and isolated to be physically interconnected.

The future focus of QWRAP is to bring additional regions into the program while facilitating the further development of existing regional alliances. The program will continue to encourage councils to consider alternative approaches to providing urban water services, in particular supporting efforts to optimise capital investment to generate the greatest long-term returns. True reform of the water industry in Queensland remains possible only through collaboration among local goverments and the State Government, while recognising the needs of the communities they serve.

Rock Filter at Gaynah Waste Water Treatment Plant, May 2017

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